ference of longitude independent of the right ascension of the stars. Both observers then reversed the axis of their transit instruments; Cambridge selected a second pair of stars from the list, and the same series of observations was repeated as with the first pair. The error of collimation was thus eliminated, and by confining the observations to stars within about five degrees of the zenith, the influence of azimuthal error was avoided. The level being read at every reversal, the correction for it was applied by computation. In this manner it is hoped to eliminate every possible source of error, except that which arises from the personal habits of the observers. In order to eliminate this error, a *travelling* observer worked for a time at Cambridge and compared with the Cambridge astronomer; then came to New York and compared with the New York astronomer; then returned to Cambridge again, and so on as often as was thought necessary. Finally, at the conclusion of the campaign all the observers were to meet at Cambridge and make a general comparison of their modes of observation.

On one or two nights the preceding programme was changed, and each observer telegraphed both star A and star B.

2. "On the peculiar cooling effects of Hydrogen and its compounds in cases of Voltaic Ignition." By W. F. Stevenson, Esq., F.R.S.

In this communication the author gives several theorems which he considers to be established by the experiments cited in a pamphlet which he published, entitled "The Non-decomposition of Water distinctly proved." He then states, that when we apply the principle of these theorems to Mr. Grove's discovery of the cooling properties of hydrogen, it will be found to admit of a most simple solution: "for instance, when the coil of platinum wire is connected with the poles of the electric battery, and the current is established, it is evident that the electric matter thus passed through the wire must escape at the contrary end (the air with which the wire is surrounded not being a conductor of electricity), and as the quantity of electric matter thus transmitted is considerable, and its exit from the wire confined but rapid, that commotion before noticed (in one of the author's theorems) necessarily ensues and causes the ignition of the wire; but when the coil of wire is immersed in hydrogen, which is a conductor of electricity, it is evident that the electric matter must be, at the same moment, abstracted or conducted from every portion of the wire, and consequently the commotion or rush of the electric matter at the extremity of the wire, which causes the ignition, is suspended and the comparative coolness of the wire is the necessary result."

3. Postscript to a paper "On the Ganglia and Nerves of the Heart," with two drawings. By Robert Lee, M.D., F.R.S.

The author states that since his former communication was presented to the Royal Society he has made a very minute dissection in alcohol of the whole nervous system of the young heifer's heart.